

Trends in Tans and Skin Protection in Australian Fashion Magazines, 1982 through 1991

ABSTRACT

We rated 3971 photographs of models from midsummer editions of six Australian fashion magazines from 1982–1983 to 1990–1991 for tan on a 9-point scale, for the presence of hats, for sun-protective clothing, and for shade setting. With the exception of the 1990–1991 sample, there was an increasing proportion of light tans over the years. Men were more likely to be deeply tanned than were women. The proportion of models wearing hats followed an increasing linear trend across the five periods. Three quarters of the outdoor photographs were taken in unshaded settings. In unshaded settings, 17% of the women and 5% of the men wore hats. (*Am J Public Health.* 1992; 82:1677–1680)

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Introduction

Australia has the highest incidence of skin cancer in the world.¹ While fashion norms have prescribed suntans, public health organizations in Australia have been attempting to counter this fashion through campaigns about the risks of exposure to ultraviolet rays and through efforts to promote the wearing of protective yet fashionable clothing and hats. Reports^{2–4} show encouraging developments in knowledge, attitudes, and skin-protective behavior, but no study has examined the extent to which the depiction of sun protection in fashion magazines has been consonant with skin-protection objectives. This study reports a longitudinal survey (1982 to 1991) of skin types, hat-wearing, and sun-protective clothing worn by models in six leading Australian fashion magazines.

Methods

Six magazines (*Cosmopolitan*, *Cleo*, *Dolly*, *Vogue*, *Woman's Day*, and *Mode*) were chosen as a cross-section of Australian fashion magazines. One copy of each was selected for five midsummers during the decade (1982–1983, 1984–1985, 1986–1987, 1988–1989, and 1990–1991). A coder rated each model for tan; racial type; category of clothing, defined by extent of skin uncovered; presence of a hat; and outdoor setting, defined as either shaded or unshaded (sunny). All models shown alone or in groups of less than five were coded ($n = 3971$).

The coder, who was blind to the purpose of the study, was given as a standard for tan ratings two sets of four identically posed photographs, one set of a man and one set of a woman, both in swimwear. Both models had been made tan with cosmetics to show them in four ascending depths of tan corresponding to the codes 2 (lightest), 4, 6, and 8 (darkest). If the coder judged a model to fall between these numbers, the model would be coded 1, 3, 5, 7, or 9.

A χ^2 test was applied to the following contingency tables: tan rating by year, presence of hat both by year and by sex, outdoor shade vs sunny setting by year, protective clothing by year, tan rating by sex, and tan rating by swimwear (swimwear vs other clothing). Tan rating categories 8 and 9 were combined because of the small numbers in category 9. The nature of the association found between tan rating and year of publication was determined by least squares regression analysis. Linear trends in proportions were tested with a linear trend chi-square statistic (1 df). No reliability (intercoder agreement) testing was performed on the coder's ratings after coding of a preliminary sample ($n = 50$) showed near-100% correspondence between the ratings of the coder and an author (S.C.).

Results

Of the models, 86.6% were women and 96.8% were Caucasian. Figure 1 shows an increasing proportion of light tans (ratings 1 and 2) over the years and a decreasing proportion of dark tans (ratings 7, 8, and 9), except in 1990–1991, when the trend reversed. This pattern resulted in a highly significant association between tan rating and period ($\chi^2_{28} = 369, P < .0001$).

Figure 2 shows the distribution of tan types by sex. There was a significant association between tan rating and sex ($\chi^2_7 = 210, P < .0001$), with an increasing proportion of men as tan rating increased ($\chi^2_1 = 205, P < .0001$). Men had a mean tan rating of 5.10 and women had a mean tan rating of 3.98.

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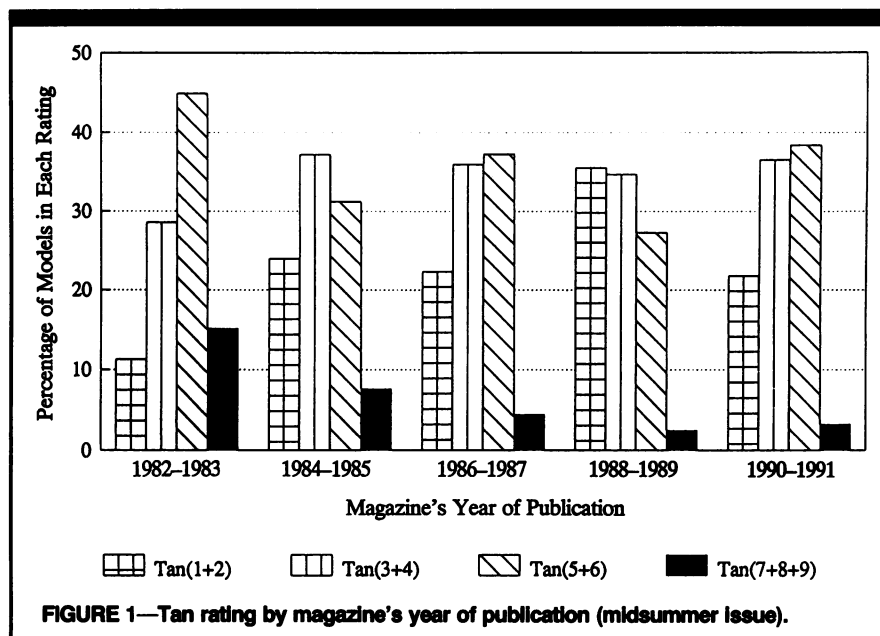


FIGURE 1—Tan rating by magazine's year of publication (midsummer issue).

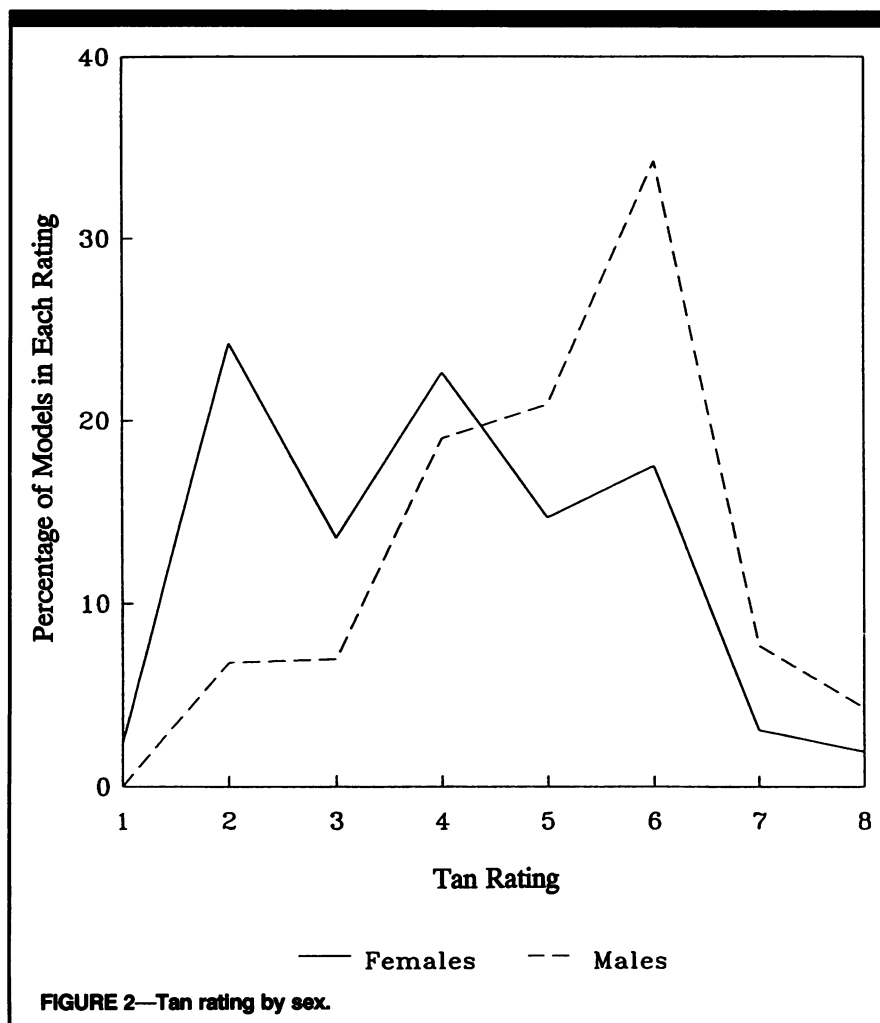


FIGURE 2—Tan rating by sex.

There was a significant association between tan rating and clothing type ($\chi^2_7 = 519$, $P < .0001$); this association was accounted for partly by a linear trend

of increasing proportion of models in swimwear as tan rating increased ($\chi^2_1 = 463$, $P < .0001$) (Figure 3). The mean tan rating for models in swimwear

was 5.47, compared with 3.89 for models in other types of clothing.

There was a significant association between presence of hats and year ($\chi^2_4 = 519$, $P = .004$); the proportion of models wearing hats followed a linear trend across the five periods ($\chi^2_1 = 15$, $P < .005$), with the proportion increasing across time (Table 1). However, when only photos set in the sun were considered, the association between proportion wearing hats and time ($\chi^2_4 = 12.7$, $P < .05$) was not accounted for by a linear trend ($\chi^2_1 = 2.7$, $P = .10$). Across all periods, 379 (9.5%) of the models wore hats (10.5% of the women, 2.2% of the men; $\chi^2_1 = 37$, $P < .0001$). In sunny settings, 174 women (17.1%) wore hats, compared with only 10 men (5.1%; $\chi^2_1 = 17$, $P < .0001$).

Of all photographs, 1574 (39.6%) were taken in outdoor settings; of these, 360 (22.9%) were shot in shaded settings, with the proportion in shade fluctuating over the study period. In contrast, the proportion of models (other than those shown nude or in swimwear, nightwear, or lingerie), shown wearing clothing that could be described as providing good skin cover tended to decrease over the study period (Table 2) ($\chi^2_4 = 149$, $P < .0001$; $\chi^2_1 = 75$, $P < .0001$; $\chi^2_3 = 74$, $P < .0001$).

Discussion

When the original European migration to Australia occurred in the 1800s, two social mores combined to promote skin protection in immigrants living in their newfound Elysian Fields: a moral code that proscribed the removal of too much clothing in public and a second code that dictated that suntans signified lower- or working-class status. In the early 20th century, both of these codes were virtually reversed. Tans became a sign of upward social mobility, indicating that a person had the financial assets to take holidays. In the United States, *Vogue* stated, "The 1929 girl must be tanned" and "A golden tan is the index of chic."⁵ In 1928 the magazine said in a lead article, "Whether or not to sunburn (suntan) is a question that many women are asking themselves and their beauty specialists."⁶

By the 1950s the fashion to tan was widespread throughout the Western world. To the advertising industry, a tanned complexion became an integral accoutrement to the promotion of all manner of products. A suntan also became a cultural signifier of health. Not only do peo-

ple now believe they *look* more healthy with a suntan, but in a recent study of attitudes toward suntans in the Australian state of Victoria, 51% of the 3100 people surveyed said that they "feel more healthy with a suntan" and 20% said they believed that "a suntan protects against skin cancer."⁷

The origins of this association between tanned skin and health are not entirely clear, but at the time of the change in fashion, the pallor associated with tuberculosis was a well-known sign of advanced disease. Similarly, sunbathing and the pursuit of warm sunny weather were forms of treatment advocated prior to the introduction of antituberculous chemotherapy.⁸⁻⁹

In addition to the individually oriented directions for skin protection incorporated in health promotion campaigns since the early 1980s,¹⁰ more recent campaigns have aimed at changing the fashion for a suntan. The changing trend in the depth of tans in fashion-magazine models in Australia over the last decade is an indication that suntans are now perceived as being less fashionable. With the worrying exception of the 1990-1991 sample period, the reduction in the depiction of models with very deep tans is clear, as is the increased proportion of models with pale skins or very light tans. The clear and continuing increase in hat wearing is also encouraging, although paradoxically, the fashion trend toward more skin-protective clothing moved in the opposite (less protective) direction.

Do these changes reflect deliberate decisions of advertising, fashion, and editorial workers to select models with lighter skins and to depict more models wearing hats? Have the trends we have found been stimulated by any explicit recognition of skin-protection values by some workers in these industries? Or do they simply reflect a subtle, gradual, and unconscious changing definition of the desirable and fashionable within sections of the industry? Important as these questions are for possible continuing change, this study cannot answer them.

The mean tan rating for men was significantly higher than that for women. Both the incidence and the mortality rate for nonmelanoma skin cancer in men are almost double those of women.¹⁰ For melanoma, the incidence in Australian men is only slightly higher than that in women, but men's mortality rate is almost twice that of women.¹⁰ The effects of the historical change in fashions promoting a suntan were followed years later

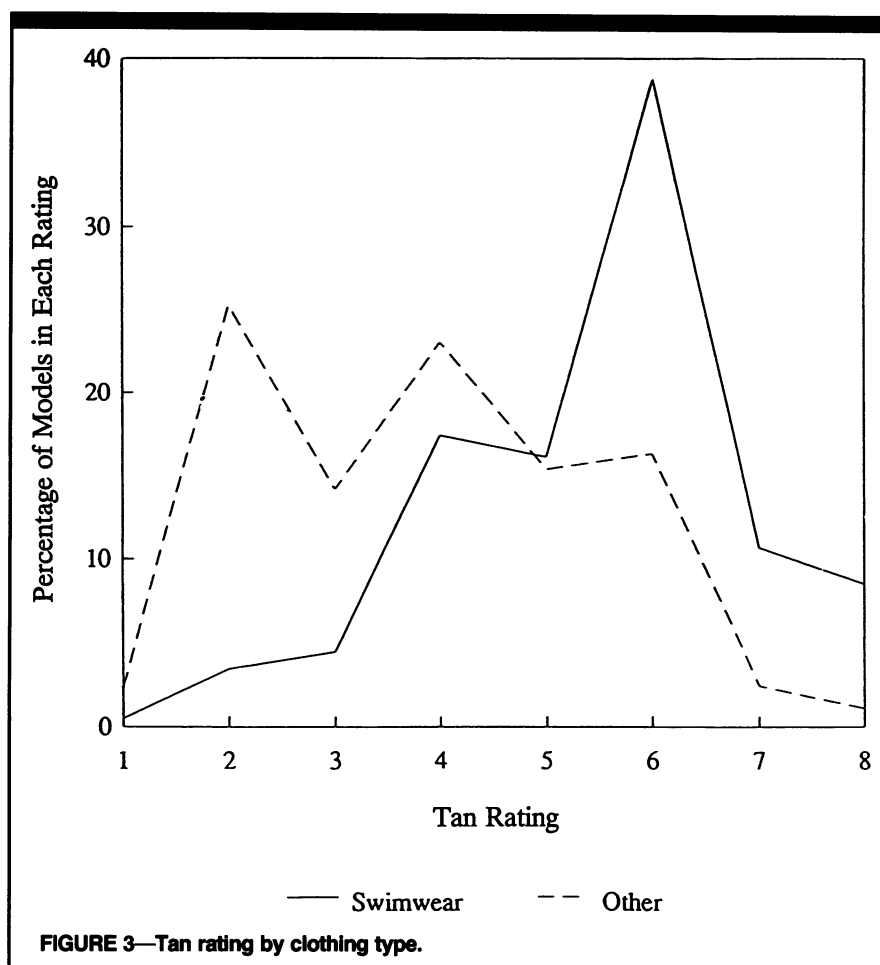


FIGURE 3—Tan rating by clothing type.

TABLE 1—Proportion of Models Wearing Hats

Those photos with	Total No. of Models	Total No. of Wearing Hats	Proportion of Models Wearing Hats, by Summer				
			1982-1983	1984-1985	1986-1987	1988-1989	1990-1991
In only sun	1214	184	.12	.18	.15	.11	.20
In all photos studied	3971	379	.07	.08	.09	.10	.12

TABLE 2—Proportion of Models Wearing Less or More Skin-Protective Clothing

Type of Clothing	Total No. of Models	Proportion of Models, by Summer				
		1982-1983	1984-1985	1986-1987	1988-1989	1990-1991
Less protective ^a	957	.33	.32	.23	.42	.56
More protective ^b	1582	.67	.68	.77	.58	.44

^aLess protective clothing: extensive exposure of arms, back, and/or legs.
^bMore protective clothing: arms, back, and/or legs mostly covered.

by a corresponding increase in the incidence and mortality rate of melanoma in people who lived through these fashion changes. It is unlikely that the levels of change toward more skin protection indicated in the present study will be re-

flected by any major change in the incidence rates of skin cancer in the immediate future. This will be so particularly if the current ozone depletion leads to an increase in the ultraviolet radiation flux at the earth's surface.¹¹ □

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References

1. Giles G, Marks R, Foley P. The incidence of non-melanocytic skin cancer treated in Australia. *Br Med J*. 1988;296:13-18.
2. Borland R, Hill D, Noy S. Changes in community awareness and reported behaviour following a primary prevention program for skin cancer control. *Behav Change*. 1990; 7:126-135.
3. Borland R, Hocking B, Godkin GA, Gibbs AF, Hill DJ. The impact of a skin cancer control education package for outdoor workers. *Med J Aust*. 1991;154:686-688.
4. Cody R, Lee C. Behaviour and intentions in skin cancer prevention. *J Behav Med*. 1990;13:373-389.
5. [US] *Vogue*. June 22, 1929:99.
6. [US] *Vogue*. July 15, 1928:64-65.
7. Hill DJ, Theobald T, Borland R, White V, Marks R. *Summer Activities, Sunburn, Sun-Related Attitudes and Precautions against Skin Cancer*. Melbourne, Australia: Anti-Cancer Council of Victoria; 1990: 13.
8. Rollier A. *Heliotherapy—with Special Consideration of Surgical Tuberculosis*. London, England: Oxford University Press; 1928.
9. Sunlight and health: notes for business men and women by the state director of tuberculosis. In: *Guide to Health and Essential Services*. Melbourne, Australia: Health Association of Australasia; 1934: 93-99.
10. Giles G, Dwyer T, Coates M, Bonett A, Ring I, Hatton WM, Shugg D, Durling G. Trends in skin cancer in Australia: an overview of the available data. *Trans Menzies Found*. 1989;15:143-147.
11. MacKie RM, Rycroft MJ. Health and the ozone layer: skin cancers may increase dramatically. *Br Med J*. 1988;297:369-370.